



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,496	04/18/2001	James E. Kaye	GIC-521.1	9980
20028	7590	11/18/2004	EXAMINER	
LAW OFFICE OF BARRY R LIPSITZ 755 MAIN STREET MONROE, CT 06468			WONG, ALLEN C	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/837,496	Applicant(s) KAYE ET AL.	
	Examiner Allen Wong	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-23 is/are rejected.
- 7) ☒ Claim(s) 12 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/3/01</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-4, 6, 7, 13-16, 18 and 19 rejected under 35 U.S.C. 102(e) as being clearly anticipated by Balakrishnan (5,793,425).

Regarding claim 1, Balakrishnan discloses a method for determining a bit rate need of a plurality of variable rate video channels in a video encoder, comprising the steps of:

processing video data from a current picture in each respective channel (fig. 1, note that there are multiple channels with multiple encoders, and inside the encoder element 22 are a pre-processing unit to process video data as shown in fig.2, element 23) to determine at least a spatial activity and a temporal activity thereof;

Art Unit: 2613

determining a bit rate demand (col.15, lines 19-20; note a newly adjusted bit rate is determined through a series of calculations in col.15) for each current picture according to the associated spatial activity and temporal activity (col.1, lines 50-59; note that the term "complexity" is equivalent to the term "activity").

Note claim 13 has similar corresponding elements.

As for claims 2-4, 6, 7, 14-16, 18 and 19, Balakrishnan discloses that the bit rate will be adjusted accordingly depending on the spatial and temporal activity (col.1, lines 43-59; note that pictures with more spatially complex scenes need an increase in bit-rate transmission to transmit the detailed scenes with better quality than transmitting at a lower bit-rate and if the pictures have simple scenes, then a lower bit-rate transmission would be used to conserve bits).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10, 11, 22 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (5,793,425).

Regarding claims 10 and 22, the Examiner takes Official Notice because it is well known to one of ordinary skilled for multiplexers to prioritize and allocate bandwidth based on priorities.

As for claims 11 and 23, all variable bit rates are adjusted as to the ratio of bandwidth versus quality. Bandwidth can be equated to the demand, therefore the broad limitations of the claimed ratio are met.

Claims 5 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (5,793,425) in view of Paik (5,321,725).

Balakrishnan does not disclose the determination of a quantization level of at least one previous picture. However, Paik does teach the feature of determining a quantization level of at least one previous picture (col.15, lines 42-49). It would have been obvious to one of ordinary skill in the art to determine a quantization level of at least one previous picture for improving picture quality during compression.

Claims 8 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (5,793,425) in view of Fling (4,630,098).

As for claims 8 and 20, Balakrishnan does not disclose the adjustment of bit-rate based on horizontal pixel resolution. Fling teaches the concept of increasing the line-rate for improving the resolution of picture since there were visible horizontal line structures, and by increasing the line-rate, thus the horizontal resolution of the picture is improved because the horizontal line structures becomes less visible. (col.4, lines 39-50). Although Balakrishnan does not use the specific terms "pixel" and "bit," it is well known that pixel and bits form a line and eventually pictures are formed from lines and pixels. It is obvious to one of ordinary skill in the art to use Fling's concept of increasing horizontal line-rate for horizontal pixel resolution so that the picture accuracy is preserved during compression.

Claims 9 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (5,793,425) in view of Shen (5,862,140).

Regarding claims 9 and 21, Balakrishnan does not disclose the determination of a brightness level. Shen discloses the determination of a luminance (luminance is equivalent to brightness) energy in P or B picture macroblocks and then decide whether or not interframe or intraframe coding should be performed (col.16, lines 37-46). Shen discloses that if a picture has less luminance energy, then intraframe coding will be performed and thus intracoding requires a higher bit-rate to encode (col.16, lines 44-46). Therefore, one of ordinary skill in the art would obviously recognize that by determining low brightness level in a picture, a higher encoding bit rate is needed to improve picture quality during compression for preservation of picture detail.

Allowable Subject Matter

3. Claims 12 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not specifically disclose the limitations "wherein said allocated bit rate for each current picture is determined in a plurality of iterations including an initial iteration and at least one successive iteration, comprising the further steps of: determining a bit rate surplus or deficit between the overall available bit rate and a sum

Art Unit: 2613


of the allocated bit rates for each current picture in the initial iteration; and allocating the surplus or deficit among at least some of the current pictures according to a ratio of bit rate demand of said at least some of the current pictures and a sum of the bit rate demands of said at least some of the current pictures in the at least one successive iteration."

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (703) 306-5978. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Allen Wong
Examiner
Art Unit 2613

Application/Control Number: 09/837,496

Page 7

Art Unit: 2613

AW

11/8/04